

Gardenroots: The Arizona Garden Project

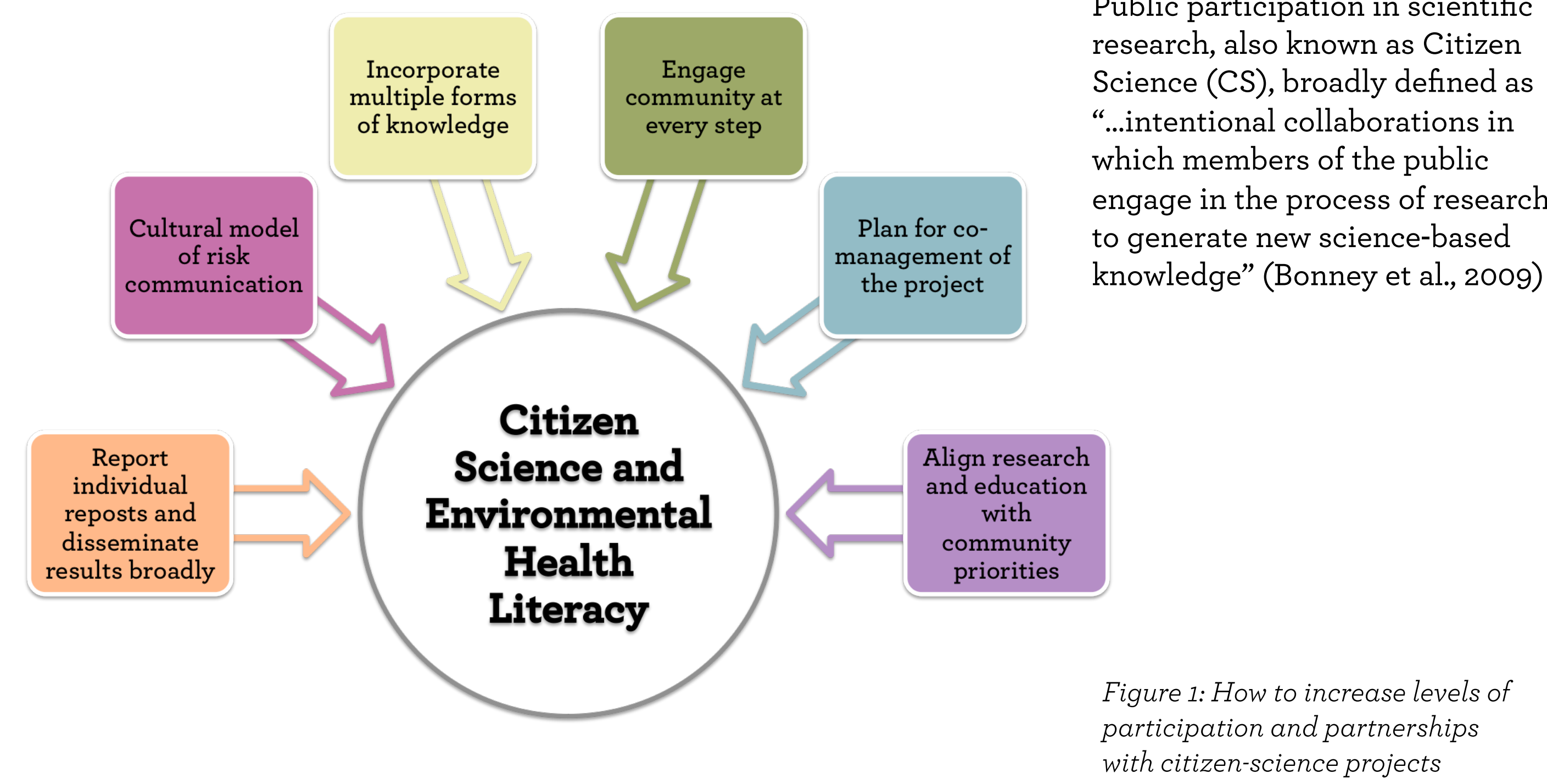
A Co-Created citizen-science project in Apache, Cochise and Greenlee County

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GOALS

- Engaging community members using a citizen science approach to research
- Train community members in the scientific method and sampling protocols in order to co-generate environmental monitoring data (soil, water, plants, and dust).
- Evaluate environmental quality and the potential exposure to contaminants of concern near resource extraction and hazardous waste sites
- Successfully communicate the study results to all participating individuals and families
- Disseminate the results broadly in order to appropriately influence community prevention practices and environmental decision-making

EXPERIMENTAL DESIGN



OUTCOMES

- Completed a needs assessment with community members and University of Arizona Cooperative Extension
- 100+ participants are involved and trained in sample collection protocols, 55 kits have been returned
- All participants have completed a pre-survey to assess knowledge, awareness, and efficacy
- Gardenroots participants received, on average quarterly project updates for the entire duration of the project
- Launched a live, public website for community accessibility and documentation (gardenroots.arizona.edu)

PROJECT METHODOLOGY

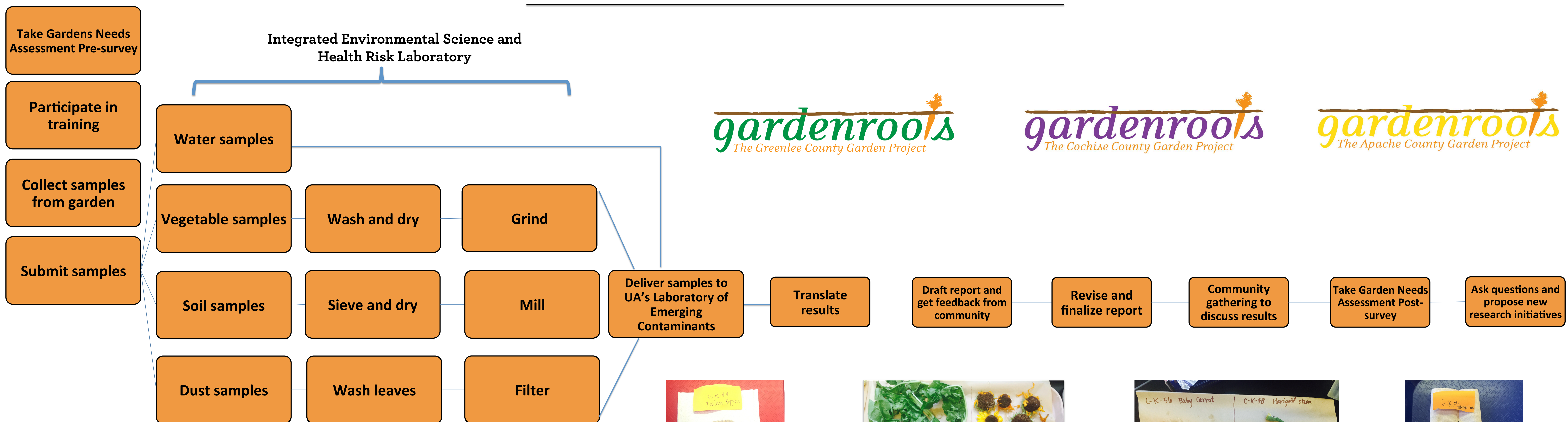


Figure 2: Sample of participant's leaf for dust analysis



Figure 3: Sample of participant's vegetables for heavy metal analysis



Figure 4: Sample of participant's vegetables for heavy metal analysis



Figure 5: Sample of participant's leaf for dust analysis

PAST WORK

- Beamer, Paloma I. et al. "Differences in Metal Concentration by Particle Size in House Dust and Soil." *Journal of environmental monitoring: JEM* 14,3 (2012): 839-844. PMC.
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- Gittleman, Mara, Kelli Jordan, and Eric Brelsford. "Using citizen science to quantify community garden crop yields." *Cities and the Environment (CATE)* 5,1 (2012): 4.
- Ramirez-Andreotta, Mónica. A greenhouse and field-based study to determine the accumulation of arsenic in common homegrown vegetables grown in mining-affected soils. *Sci Total Environ.* 2013 Jan 15; 443: 299-306.
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- Ramirez-Andreotta, Mónica. Environmental Research Translations: enhancing interactions with communities at contaminate sites. *Sci Total Environ.* 2014 Nov 1; 497-498: 651.
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Images courtesy of the Integrated Environmental Science and Health Risk Laboratory

ACKNOWLEDGEMENTS

I am most appreciative for my mentor, Dr. Mónica Ramirez-Andreotta. Thank you loving family, friends, donors, supports, peers, and teachers. "Stand on the shoulder of giants."